



DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R8–ES–2013–0092; 4500030113]

RIN 1018–AY77

Endangered and Threatened Wildlife and Plants; Reclassifying *Hesperocyparis abramsiana* (=Cupressus abramsiana) as Threatened

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), determine threatened species status under the Endangered Species Act of 1973 (Act), as amended, for *Hesperocyparis abramsiana* (=Cupressus abramsiana) (Santa Cruz cypress), a plant species found in Santa Cruz and San Mateo Counties in west-central California. We also

finalize the correction to the scientific name of Santa Cruz cypress on the List of Endangered and Threatened Plants. The effect of this regulation will be to change the listing status of Santa Cruz cypress from an endangered species to a threatened species on the List of Endangered and Threatened Plants.

DATES: This rule becomes effective [**INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER**].

ADDRESSES: This final rule is available on the internet at <http://www.regulations.gov> under Docket No. FWS–R8–ES–2013–0092 and at <http://www.fws.gov/ventura/>.

Comments and materials we received, as well as supporting documentation we used in preparing this rule, are available for public inspection at <http://www.regulations.gov>. All of the comments, materials, and documentation that we considered in this rulemaking are available by appointment, during normal business hours at: U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, California 93003; telephone 805–644–1766; facsimile 805–644–3958.

FOR FURTHER INFORMATION CONTACT: Stephen P. Henry, Field Supervisor, U.S. Fish and Wildlife Service, Ventura Fish and Wildlife Office, 2493 Portola Road, Suite B, Ventura, CA 93003; telephone 805–644–1766; facsimile 805–644–3958.

Persons who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 800–877–8339.

SUPPLEMENTARY INFORMATION:**Previous Federal Action**

On September 3, 2013, we proposed to reclassify the Santa Cruz cypress from an endangered species to a threatened species (78 FR 54221) on the List of Endangered and Threatened Plants in part 17 of title 50 of the Code of Federal Regulations (CFR). Please refer to the proposed reclassification rule for the Santa Cruz cypress (78 FR 54221; September 3, 2013) for a detailed description of the previous Federal actions concerning this species. This final rule constitutes our final action regarding the petition to reclassify the Santa Cruz cypress from endangered to threatened (Pacific Legal Foundation 2011, pp. 1–11).

Background

For a detailed discussion of Santa Cruz cypress's description, taxonomy, life history, habitat, soils, distribution, abundance, age and size distribution, and role of fire in regeneration, please see the Santa Cruz Cypress *Hesperocyparis [Cupressus] abramsiana* Species Report (Service 2015, pp. 1–57) (Species Report), which is available for review under Docket No. FWS–R8–ES–2013–0092 at <http://www.regulations.gov>. Please refer to the proposed reclassification rule for the Santa Cruz cypress (78 FR 54221; September 3, 2013) (Service 2013b) for a summary of information about the species and the

proposed change in taxonomy: In this final rule, we replace the entry for *Cupressus abramsiana* from 50 CFR 17.12(h) with an entry for *Hesperocyparis abramsiana*.

Summary of Biological Status and Factors Affecting the Species

This section introduces and summarizes the biological status and factors affecting Santa Cruz cypress identified at each period of the species' review history. We have described the level of threats using a scale of low, moderate, and high (as discussed in Appendix 1 of the Species Report). A low-level threat indicates a threat that has the potential to occur at any time, although the possibility is unlikely that this threat will affect the species across its range or interrupt the species' persistence into the future. A moderate-level threat indicates a threat that is currently affecting the long-term persistence of the species in a particular population or across its range, but does not pose an imminent threat to the persistence of the species. A high-level threat indicates a well-documented, imminent threat to a large number of individuals that has the potential to disrupt the long-term persistence of the species in a particular population or across its range.

At the time of listing, the primary threats to Santa Cruz cypress were residential development, agricultural conversion, logging, oil and gas drilling, genetic introgression, and alteration of the natural frequency of fires that threatened to destroy portions of each population (52 FR 675; January 8, 1987). Other (secondary) threats in 1987 included vandalism, disease, and inadequate regulatory mechanisms (52 FR 675). Of the primary threats in 1987, residential development, agricultural conversion, and logging threatened

individual Santa Cruz cypress trees and stands with imminent destruction. Other threats identified in the Recovery Plan for the Santa Cruz Cypress (Service 1998) also included oil and gas development, reproductive isolation, introgression, and competition from nonnative species.

On May 21, 2010, we notified the public in the **Federal Register** of the availability of the 5-year review for Santa Cruz cypress (75 FR 28636). The 5-year review was completed on August 17, 2009 (Service 2009, entire), and resulted in a recommendation to change the status of the species from an endangered species to a threatened species. At the time of the 2009 5-year review, we reported that the threats to Santa Cruz cypress from residential development, agricultural conversion, and logging had decreased since the time of listing. This decrease was achieved primarily through the acquisition of lands for conservation by the California Department of Pesticide Regulation (CDPR) and the California Department of Fish and Wildlife (CDFW) and through other private land transfers. No evidence existed that oil and gas drilling was a threat to the species. The 5-year review also found information that the population size (number of individuals at each site) of the species was greater than known at the time of listing. The threats from alteration of fire frequencies, disease or predation, reproductive isolation, genetic introgression, vandalism, and competition with nonnative species remained at the same level as identified during the development of the Recovery Plan (Service 1998).

The 5-year review identified low levels of regeneration (new recruitment of seedlings and young plants) and the effects of climate change as concerns for the long-term persistence of the Santa Cruz cypress (Service 2009, pp. 9–13). Climate change was classified as a moderate-level threat because projections indicated that the regional Santa Cruz climate will become warmer and drier, which would directly affect Santa Cruz cypress across its range over the next century (Service 2009, pp. 10–11).

In accordance with section 4(a)(1) of the Act, our assessment of the current status of a species is based on whether a species is in danger of extinction or likely to become so because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.

Current or potential future threats to Santa Cruz cypress include alteration of the fire regime (Factors A and E), competition with nonnative species (Factors A and E), climate change (Factor A), genetic introgression (Factor E), and vandalism and unauthorized recreational activities (Factors A and E). The acquisition of lands for conservation by State agencies and designation of lands as sensitive areas by Santa Cruz County have resulted in protection of all or large portions of each population, but currently do not provide protections from the threats listed above (Factor D). Other potential impacts evaluated and found either to be of no concern, insignificant concern, or

negligible at this time include residential development, agricultural conversion, logging, and oil and gas drilling (Factor A); overutilization (Factor B); disease or predation (Factor C); and reproductive isolation (Factor E). Please see Table 1, Table 4, and the “Discussion of Threats to the Species” section of the Species Report for a thorough discussion of all potential and current threats (Service 2015, pp. 3, 22–40).

We note, however, that, although the threats of residential development and agricultural conversion to Santa Cruz cypress have been ameliorated considerably compared to the time of listing (to the point that we consider them insignificant at this time), they may still occur at two of the populations (i.e., the Bracken Brae and Bonny Doon populations), although the likelihood is less than previously identified in the Recovery Plan. Specifically, while these lands are not in permanent conservation ownership, the likelihood of potential residential development is reduced at the Bracken Brae population because the land is owned by a conservation-oriented landowner (Service 2015, p. 45) and Santa Cruz County designation of these lands as a sensitive area places a restriction on certain kinds of development. We do not expect this county designation as a sensitive area to change in the future, even when the species is reclassified to threatened or if it is eventually delisted. Additionally, potential impacts of agricultural conversion is currently reduced (to an insignificant level) at the Bonny Doon population as a result of a large proportion of the population (i.e., approximately 70 percent) now occurring on lands designated as a reserve (Service 2015, pp. 15, 16, 45). The portion that is not part of the reserve (i.e., approximately 30 percent) is still subject to potential agricultural conversion, although potential loss of this area outside the

reserve is relatively unlikely due to the county's designation of these lands as a sensitive area, thus agricultural conversion is a low-magnitude threat overall for the population and the species as a whole.

The following sections provide a summary of the current threats impacting the Santa Cruz cypress. As identified above, these threats include alteration of the fire regime (Factors A and E), competition with nonnative species (Factors A and E), climate change (Factor A), genetic introgression (Factor E), vandalism and unauthorized recreational activities (Factors A and E), and the inadequacy of existing regulatory mechanisms (Factor D). As identified above some of the same potential activities that affect the habitat (Factor A) of Santa Cruz cypress can also affect individuals (Factor E). Where appropriate, we discuss impacts to both the habitat and to individuals of Santa Cruz cypress together for ease of discussion and analysis.

Alteration of Fire Regime

The long-term persistence of Santa Cruz cypress populations can be affected by the disruption of the natural fire frequency because Santa Cruz cypress requires fire (or potentially mechanical disturbance in lieu of, or in combination with, fire) to reproduce. Most Santa Cruz cypress populations are located close to residential areas, where natural fires from surrounding wildland areas are excluded by the creation of fire breaks and fuels reduction projects. Both fire exclusion and fire suppression lengthen the interval between fires, thus altering the natural fire regime and increasing the risk of extirpation

from senescence (growth phase from full maturity to death). Conversely, human ignitions contribute to fire intervals that are too short, which in turn can inhibit Santa Cruz cypress from reaching its reproductive potential if stands burn prior to trees reaching reproductive age. With prevalent fire exclusion on lands surrounding Santa Cruz cypress occurring, other techniques such as mechanical disturbance of the ground, removal of litter and nonnative invasive species, and clearing the canopy to allow sunlight to reach the ground may need to be utilized to achieve regeneration of the species. Currently, mechanical disturbance and litter removal at the Bonny Doon Ecological Reserve are being implemented on a limited basis following the Draft Management Plan developed for the Bonny Doon Ecological Reserve (Service 2015, pp. 37, 41, 42). Additionally in 2005, CAL FIRE developed a vegetation management plan for the Bonny Doon Ecological Reserve that included enhancing sensitive habitat for listed species and improving forest health (CAL FIRE 2005, p. 3). This plan has not been fully implemented and is currently delayed (Service 2015, p. 42).

The altered fire regime presents a high-level threat to the long-term persistence of all of the Santa Cruz cypress populations and their habitat. Santa Cruz cypress depends on fire to maintain appropriate habitat conditions and to release many of the seeds stored in cones in the canopy. As adult trees senesce and die, seed production decreases, such that there is insufficient seed available to regenerate the stand (McGraw 2007, p. 24; Service 2015, p. 25). In the absence of fire, recruitment still occurs, but at a low level that is likely not sufficient for stand replacement (McGraw 2011, p. 2; Service 2015, p. 25). To germinate in large numbers, the species requires open ground and canopy

conditions created by fires intense enough to kill the parent tree. In the absence of fire the species is only able to germinate opportunistically in rock outcroppings or small areas that have been disturbed. Without appropriate disturbance from fire, the stands could eventually senesce, resulting in minimal reproduction in small rock outcrops that may be inadequate to maintain population viability.

Within the range of the Santa Cruz cypress, recent and past fires have been documented at the Bonny Doon (2008) and Eagle Rock populations (Service 2015, pp. 23–24), although even-aged stands at the Butano Ridge, Bracken Brae, and Majors Creek populations suggest that past fires have occurred in these areas as well. We estimate that approximately 50 percent (1,500 Santa Cruz cypress individuals) of the Bonny Doon population was killed within the severely burned areas (Service 2012, unpubl. data). This is based on visual inspection of the burn intensity map and our knowledge of the distribution of this population. In 1905, a severe fire also destroyed a large portion of the Eagle Rock population (Wolf and Wagener 1948, p. 218). Prior to the fire, there was a “considerable stand” of Santa Cruz cypresses, which were used by the landowner for timber to build barns and other buildings (Wolf and Wagener 1948, p. 218). According to Lyons (1988, pp. 19–20), another fire burned through a majority of the Eagle Rock population in 1942, killing most of the cypresses. Lyons (1988, p. 19) noted that some larger individuals at the Eagle Rock site, estimated to be 40–60 years old, appeared to have survived the fire.

Despite fire occurring within the known range of Santa Cruz cypress, McGraw (2011, p. 2) states that the current demographics and natural recruitment rates observed in the Majors Creek, Eagle Rock, and Butano Ridge populations appear to be insufficient to maintain the populations in the absence of fire (Service 2015, p. 22). Additionally, active management to address this concern is not occurring at this time. The altered fire regime presents a threat to the long-term persistence of all of the Santa Cruz cypress populations, and we consider altered fire regime to be a high-level threat to the species (Service 2015 p. 24). See additional discussion in the “Alteration of Fire Regime” section of the Species Report (Service 2015, pp. 23–25).

Most stands of Santa Cruz cypress contain reproductive individuals, so most stands are currently facing a senescence risk from the absence of fire. Recruitment in at least four populations (the portion of Bonny Doon population that burned in the 2008 Martin Fire, and the Eagle Rock, Butano Ridge, and Majors Creek populations) is evident; however, the current level of recruitment is not sufficient to maintain the populations in the absence of fire (Service 2015, p. 26). This is likely also the case with the Bracken Brae population and the portion of the Bonny Doon population that did not burn. Under these conditions most trees would become senescent (post-reproductive) prior to a return fire, resulting in lower stand vitality, reduced cone production, and reduced seedling establishment. The risk of extirpation exists if cypresses senesce and their seeds are no longer viable by the time fire returns to a stand. This may occur if the fire interval is longer than the lifespan of trees (Ne’eman *et al.* 1999, p. 240). For the purposes of this discussion, we estimate the potential lifespan of individual Santa Cruz

cypress trees to be about 100 years based on Lyons' (1988, pp. 2–39) estimate (see the “Life History” discussion in the Species Report (Service 2015, pp. 8–9) for additional discussion).

As discussed above, without fire or other appropriate disturbance, we expect low recruitment and decreasing reproduction as existing trees become senescent. This scenario would most likely result in population declines as a result of mortality of currently existing trees, and lack of replacement due to low recruitment and declining reproduction. The frequency, location, and intensity of fire in an area is variable and difficult to predict, and depends on many factors including environmental and human-caused factors, management, and suppression efforts. For the Santa Cruz cypress there have only been one or two recorded fires over the past 100 years within the areas occupied by the species, and we do not expect the fire conditions, frequency, or management to change significantly in the near future. As a result, we do not currently consider the fire interval to be adequate to maintain populations of the species over the long term and consider the extended fire interval to be a threat that is likely to put the species at risk of extinction in the future.

Competition with Nonnative Species

The presence of nonnative, invasive species impacts the long-term persistence of Santa Cruz cypress and its habitat both currently and in the future through competition and habitat modification. Many nonnative species have been introduced into Santa Cruz

cypress habitat through a variety of past impacts (e.g., development, infrastructure). Significant impacts result from *Acacia dealbata* (silver wattle) and *Genista monspessulana* (French broom). Silver wattle and French broom are currently impacting two populations (i.e., Majors Creek and Bonny Doon) and are likely to impact, at minimum, two additional populations (i.e., Eagle Rock and Bracken Brae) due to the cypress's proximity to residential areas where ground disturbance activities promote nonnative plant invasions.

Silver wattle is significantly impacting the Majors Creek population and its habitat by creating dense canopies, which can inhibit germination and growth of seedlings by blocking sunlight needed for cypress growth (McGraw 2007, p. 23; Service 2015, pp. 31–32). French broom is one of the most prevalent invasive species in Santa Cruz County, distributed at elevations where all but a portion of one Santa Cruz cypress population occurs (Moore 2002, p. 6; Service 2015, p. 32). French broom is impacting the Bonny Doon population and its habitat by inhibiting Santa Cruz cypress seedling establishment through competition for open, recently disturbed soils that have access to abundant sunlight. Additionally, but to a lesser degree, European annual grasses (present at all populations) are known to impact Santa Cruz cypress by precluding the establishment of seedlings. These nonnative shrubs and annual grasses are impacting most of the populations of Santa Cruz cypress and are expected to continue to do so over the long term. We consider competition with nonnative species to be a moderate-level threat to the Santa Cruz cypress. See additional discussion in the “Competition With Nonnative Plant Species” section of the Species Report (Service 2015, pp. 31–33).

Climate Change

Our analyses under the Act include consideration of ongoing and projected changes in climate. The terms “climate” and “climate change” are defined by the Intergovernmental Panel on Climate Change (IPCC). The term “climate” refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements (IPCC 2013, p. 1450). The term “climate change” thus refers to a change in the mean or variability of one or more measures of climate (e.g., temperature or precipitation) that persists for an extended period, whether the change is due to natural variability or human activity (IPCC 2013, p. 1450). Various changes in climate may have direct or indirect effects on species. These effects may be positive, neutral, or negative, and they may change over time, depending on the species and other relevant considerations, such as threats in combination and interactions of climate with other variables (for example, habitat fragmentation) (IPCC 2014, pp. 4–11). Within central-western California (i.e., California coastal counties from San Francisco south to Santa Barbara, including the range of the Santa Cruz cypress), predictions indicate warmer winter temperatures, earlier warming in the spring, and increased summer temperatures (Point Reyes Bird Observatory (PRBO) Conservation Science 2011, p. 35), all of which will likely result in shifts in vegetation types. This can, for example, result in increased competition between species like Santa Cruz cypress and other native and nonnative species (Loarie *et al.* 2008, pp. 1–10), or result in habitat changes resulting from altered fire frequency and water availability (Service 2015, pp.

28–29). Drier conditions and increased fire frequency that may result from climate change could also make conditions somewhat more favorable for Santa Cruz cypress. However, we anticipate continuing fire suppression and fire exclusion practices would outweigh any potential favorable effects. Thus, while impacts of climate change could potentially have either positive or negative effects to Santa Cruz cypress, the altered fire regime as a result of fire exclusion and fire suppression practices remains a primary threat to the species. We therefore consider climate change to be a moderate-level threat to the Santa Cruz cypress. See additional discussion in the “Climate Change” section of the Species Report (Service 2015, pp. 26–29).

Genetic Introgression

If individuals of different cypress species are planted in close proximity, they can exchange pollen and may produce fertile hybrid offspring, as has been documented in a number of plant species (Rhymer and Simberloff 1996, pp. 98–99). By this means, genes from one species can infiltrate into another, a process called genetic introgression. Santa Cruz cypress may be affected by introgression from residential plantings of *Hesperocyparis macrocarpa* (Monterey cypress) near the Bonny Doon population (V. Haley 1993, pers. obs.), plantings of *Cupressus glabra* (Arizona cypress) near the Eagle Rock population, and potentially by plantings near other populations due to their close proximity to residential areas where plantings of other cypress species could occur. Examination of genetic variation among Santa Cruz cypress populations and between Santa Cruz cypress and neighboring species (Millar and Westfall 1992, p. 350) indicates

the potential that hybridization may occur between Santa Cruz cypress and the neighboring species. The main harmful genetic effect of such hybridization on native species is the loss of both genetic diversity and the ability of native populations to continue to persist due to potential loss of locally adapted characteristics. The resulting hybrid taxa can also reduce the growth of, or replace, native species and compete for resources otherwise available (Vila *et al.* 2000, pp. 207–217).

We consider genetic introgression to be a low-level threat to the Santa Cruz cypress because it is probably a concern for only two populations. Genetic introgression has not been documented for Santa Cruz cypress, but is a potential threat given the proximity of non-native cypress and the ease with which cypress species hybridize. However, introgression is a long-term process in itself, generally taking many generations for significant population-level impacts to occur. Given the long generation time of the species, genetic introgression is currently considered a potential threat rather than an imminent threat. See additional discussion in the “Genetic Introgression” section of the Species Report (Service 2015, pp. 30–31).

Vandalism and Unauthorized Recreational Activities

Vandalism and unauthorized recreational activities have been documented to impact multiple Santa Cruz cypress populations and their habitat. These activities result in construction of unauthorized trails (such as those within the Majors Creek population at Wilder Creek State Park) (CDPR 2000; K. Barry, Service, 2012, pers. obs.), which in

turn result in erosion (McGraw 2007, p. 22) and potentially prevention of seedling establishment. Additionally, trails wear away substrate from the base of mature cypress trees. Although vandalism and unauthorized recreational activities are not considered to impact the populations significantly at this time (considered a low-level threat because only a small proportion of trees and habitat across the species' range are affected by these activities), they remain a concern due to the likelihood of increased inhabitants in the urban-wildland interface where Santa Cruz cypress occurs. See additional discussion in the "Vandalism and Unauthorized Recreational Activities" section of the Species Report (Service 2015, p. 33).

Existing Regulatory Mechanisms

Reclassifying Santa Cruz cypress from endangered to threatened would not significantly change the protections afforded to this species under the Act. Santa Cruz cypress conservation has been addressed in some local, State, and Federal plans, laws, regulations, and policies. Now that most of the trees reside in fully protected areas on State or County park lands, the inadequacy of existing regulatory mechanisms is considered a low-level threat to Santa Cruz cypress. The threat of habitat alteration has been substantially reduced, and, therefore, the concern regarding inadequate legal protections on the landscape scale has been reduced. Although existing regulations have resulted in conservation of Santa Cruz cypress habitat, inadequacy of existing regulatory mechanisms is still considered a low-level threat because the potential remains for destruction or alteration of Santa Cruz cypresses and their habitat on private lands.

However, the main concern currently and into the future is the lack of ongoing management to prevent senescence and ensure population persistence. If current Santa Cruz cypress habitat becomes unfavorable to the species due to lack of adequate management, Santa Cruz cypress may not persist even if the land is sufficiently conserved. See additional discussion in the “Legal Protection” section of the Species Report (Service 2015, pp. 34–37).

Combination of Threats

The threat to the long-term persistence of Santa Cruz cypress is compounded by multiple interacting factors, specifically: (1) The alteration of fire regimes and lack of species management; and (2) human activities, nonnative species, and fire. With the prevalence of fire exclusion and suppression near residential communities within the range of the species, the opportunity for Santa Cruz cypress to regenerate in large pulses following fire is reduced. This fire suppression coupled with the lack of species-specific management is resulting in minimal regeneration for the species as a whole, which could be exacerbated if this situation continues into the future. The ability of land managers to adequately maintain cypress populations on public lands is subject to constraints and physical barriers, such as the difficulty or inability of using fire as a management tool due to proximity to development or because of air quality standards.

Additionally, human intrusion into previously undisturbed areas contributes to colonization of nonnative plant species in the remote areas of Santa Cruz cypress forests

(see the “Competition with Nonnative Plant Species” section of the Species Report (Service 2015, pp. 31–33)). This activity exacerbates the likelihood for the creation of open conditions (e.g., bike trails, road cuts, and firebreaks), allowing nonnative plants to proliferate and compete with the cypress for soil, nutrients, and light. If a wildfire is then introduced into these new (open) conditions, nonnative species that compete with Santa Cruz cypress could then easily spread. The presence or increase in nonnative species can inhibit cypress seedlings by blocking the sunlight they need to grow (McGraw 2007, p. 23). See “Compounding Threats” section of the Species Report (Service 2015, pp. 37–38).

Overall Summary of Factors Affecting Santa Cruz Cypress

Impacts to the long-term persistence of Santa Cruz cypress populations from alteration of the fire regime (Factors A and E) remains a significant concern currently and in the future (i.e., at least approximately 100 years, based on the potential lifespan of individual Santa Cruz cypress trees per Lyons’ (1988, pp. 2–39) estimate and based on past fire interval (two to three documented fires in two populations over the past 110 years)). Because the germination and establishment of new seedlings depends either on natural fire or a managed substitute (e.g., controlled burns or mechanical disturbance), appropriate fire or disturbance regimes are needed to manage the demographic profile of the five populations. Lack of fire or other disturbance to promote germination and seedling establishment poses a senescence risk to the stands and populations of Santa Cruz cypress (Service 2015, p. 30). Without recruitment of new individuals, trees in the

current even-aged stands may become senescent (or no longer reproductive) and no longer produce cones and seeds necessary for long-term reproductive success and persistence of the populations (which has been observed in Santa Cruz cypress populations by McGraw (2007, pp. 20–21)). While most of the populations have been protected through acquisition of lands for conservation, no active management is currently occurring to manage the demographic profile of the populations. Research on suitable management methods has only begun recently at Bonny Doon Ecological Reserve (McGraw 2011, entire); future management of this population is expected to provide additional understanding of conditions that would promote regeneration, thus providing beneficial management recommendations that could be applied to all populations.

Although the altered fire regime is identified as a high-level impact to Santa Cruz cypress at this time, the level of impact does not currently place the species in danger of extinction because of the expected continued presence of the populations into the future based on the lifespan of individuals and the current age structure, and the recruitment (albeit minimal overall) that has been observed to date. Because the majority of individuals in the populations are reproductive, additional recruitment can be expected, although it likely will not be at a level sufficient to sustain the populations over the long term.

In addition to altered fire regime, other impacts to Santa Cruz cypress and its habitat are currently occurring or potentially occurring in the future, but to a lesser degree

than the overall impact from an altered fire regime. These include competition with nonnative, invasive species (Factors A and E); climate change (Factor A); genetic introgression (Factor E); and vandalism or unauthorized recreational activities (Factors A and E). Nonnative plants are competing with Santa Cruz cypress by invading open areas where cypress seedlings could become established, thus competing for soil, nutrients, and light (Service 2015, pp. 31–33). Climate change may cause vegetation shifts and promote more frequent and larger stand removal wildfires under which the species has not evolved (Service 2015, pp. 26–29). Genetic introgression of Santa Cruz cypress with at least two different cypress species could result in hybridization and result in the loss of Santa Cruz cypress’s competitive advantage in its preferred habitat (Service 2015, pp. 31–32). Vandalism and unauthorized recreational activities may inhibit seedling establishment and increase erosion (Service 2015, p. 33). Additionally, although substantial mechanisms are currently in place to protect Santa Cruz cypress and its habitat, the existing regulatory mechanisms are inadequate to fully protect the species from the threats described above (Factor D). Based on our current analysis and the current level of management being implemented, the remaining impacts are expected to influence Santa Cruz cypress’s habitat suitability and its ability to reproduce and survive in the future.

In summary, impacts from development, agricultural conversion, logging, and oil and gas development, which were considered imminent at the time of listing, have been substantially reduced or ameliorated. Other impacts identified at or since listing (i.e., alteration of fire regime; competition with nonnative, invasive species; climate change;

genetic introgression; and vandalism, including unauthorized recreational activities) continue to impact Santa Cruz cypress or are expected to impact the species in the future. Although individually these impacts (with the exception of altered fire regime) are of low or moderate concern to the species, their cumulative impact can promote and accelerate unnatural conditions (Service 2015, pp. 37–38). For example, human intrusion into previously undisturbed areas contributes to colonization of nonnative plant species in the remote areas of Santa Cruz cypress forests, which in turn may result in increased wildfires and potentially increased community concern for wildfire suppression activities. These types of interactions could become a greater concern to Santa Cruz cypress in the future if there is increased human activity in cypress forests.

The high-level impact of an altered fire regime to Santa Cruz cypress and its habitat is of greatest concern at this time. The threat to long-term persistence of Santa Cruz cypress posed by this high-level impact is exacerbated by the lack of species management, resulting in continued effects to the age structure and demographic profile of the species. Although operating on the species currently, the impacts from an altered fire regime, either alone or in combination with the other impacts identified above, do not place the species at immediate risk of extinction. Reproduction and recruitment is evident (although not at a level sufficient for long-term persistence) based on recent data in at least four populations (i.e., the portion of the Bonny Doon population that burned in the 2008 Martin Fire, and at the Eagle Rock, Butano Ridge, and Majors Creek populations) (Service 2015, p. 46). However, if fire or other disturbance does not occur in the future to promote germination and seedling establishment (whether through a

natural fire event or active management), senescence could result in a downward population trend that is likely to place the species in danger of extinction.

Distinguishing Threats for Both Cypress Varieties

As described in the proposed rule and Species Report (78 FR 54223; September 3, 2013; Service 2015, pp. 7–8), recent taxonomic evaluations of *Hesperocyparis abramsiana* identified two varieties: *H. a. var. butanoensis* (Butano Ridge population) and *H. a. var. abramsiana* (Eagle Rock, Bracken Brae, Bonny Doon, and Majors Creek populations) (Adams and Bartel 2009, pp. 287–299). Therefore, the threats analysis provided in the Species Report (Service 2015, entire) and summarized in this document includes a separate evaluation for each of the five populations, in part to distinguish the level of impact the current threats have on the two separate varieties. The information summarized below is evaluated and described in detail in the “Discussion of Threats to the Two Separate Varieties” section of the Species Report (Service 2015, pp. 38–40).

The Butano Ridge population (*Hesperocyparis abramsiana* var. *butanoensis*) is primarily threatened by changes in the historical fire regime and the impacts as a result of the changed fire regime (Factors A and E). The population is located away from developed areas, but because it is near a lumber operation, fire exclusion and suppression activities that alter the fire regime are likely in the vicinity. Other impacts identified at the time of listing are no longer impacting this population or are no longer considered significant (e.g., logging, oil and gas drilling), in large part due to this population now

being fully protected and managed within the boundaries of Pescadero Creek County Park. Although this variety is not considered a separate species, its status as a separate variety indicates its divergence from other populations of the species. Further divergence, and potentially the process of speciation, may continue through sustained reproductive isolation from other Santa Cruz cypress populations. Additionally, this is the only location for this variety, and it is composed of a single stand, thus making it vulnerable to an impact such as disease if exposed. However, at this time it is highly unlikely that potential impacts such as development, disease, predation, and others (as described in the Species Report (Service 2015, pp. 23–40)) would occur at the Butano Ridge population. An altered fire regime is the main concern present at this population, with potential concerns currently or in the future related to competition with nonnative species (Factors A and E) and climate change (Factor A).

Similar to the Butano Ridge population described above, the primary impact to the Eagle Rock, Bracken Brae, Bonny Doon, and Majors Creek populations (*Hesperocyparis abramsiana* var. *abramsiana*) is the alteration of the fire regime (Factors A and E), which was identified at the time of listing. This impact remains present at all populations of the Santa Cruz cypress, although management actions at the Bonny Doon Ecological Reserve have included some mechanical vegetation removal in an attempt to reduce this impact (Service 2015, pp. 39–40). Impacts from competition with nonnative species (Factors A and E) and climate change (Factor A) also threaten the long-term persistence of both varieties of Santa Cruz cypress (in addition to vandalism and unauthorized recreational activities (Factors A and E), and genetic introgression (Factor

E) potentially impacting the *H. a. var. abramsiana* populations), and there are no management actions proposed to address these concerns. The existing regulatory mechanisms protect the species from development activities but are inadequate to fully protect the species from these other impacts (Factor D). Please see the “Current Threats” and “Discussion of Threats to the Two Separate Varieties” sections of the Species Report for additional discussion related to current or potential threats to these Santa Cruz cypress populations (Service 2015, pp. 23–40).

Recovery and Recovery Plan Implementation

Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. A recovery plan for the Santa Cruz cypress was developed in September 1998 (Service 1998, entire). Under section 4(f)(1)(B)(ii), recovery plans must, to the maximum extent practicable, include: “Objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of [section 4 of the Act], that the species be removed from the list.” However, revisions to the list (adding, removing, or reclassifying a species) must reflect determinations made in accordance with sections 4(a)(1) and 4(b) of the Act. Section 4(a)(1) requires that the Secretary determine whether a species is endangered or threatened (or not) because of one or more of five threat factors. Section 4(b) of the Act requires that the determination be made “solely on the basis of the best scientific and commercial data available.” Therefore, recovery criteria should help indicate when we

would anticipate an analysis of the five threat factors under section 4(a)(1) to result in a determination that the species is no longer an endangered species or threatened species because of any of the five statutory factors.

Thus, while recovery plans provide important guidance to the Service, States, and other partners on methods of minimizing threats to listed species and measurable objectives against which to measure progress towards recovery, they are not regulatory documents and cannot substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to revise the status of or remove a species from the Federal List of Endangered and Threatened Plants (50 CFR 17.12) is ultimately based on an analysis of the best scientific and commercial data then available to determine whether a species is no longer an endangered species or a threatened species, regardless of whether that information differs from the recovery plan.

The Recovery Plan states that Santa Cruz cypress can be reclassified to threatened status when protection is secured for all five populations and their habitat from the primary threats of logging, agricultural conversion, and development (Service 1998, p. 30). This criterion was intended to address the point at which imminent threats to the species had been ameliorated so that the populations were no longer in immediate risk of extirpation. Because of its limited range and distribution, we determined that essentially all of the known habitat is necessary to conserve the species. At the time the Recovery Plan was prepared, we estimated that areal extent totaled 356 ac (144 ha). After more accurate mapping (McGraw 2007, entire), we now estimate that areal extent totals

approximately 188 ac (76 ha) (Service 2015, p. 43). Additionally, estimated abundance of individuals in all populations has changed over time, from approximately 2,300 individuals at the time of listing in 1987, to a current range of 33,000 to 44,000 individuals (although the latter estimate is variable due to mortality and regeneration following the 2008 Martin Fire that burned 520 ac (210 ha) of land and a portion of the Bonny Doon population) (see Table 1 and the Bonny Doon population discussion under the “Population Descriptions” section of the Species Report (Service 2015, pp. 6, 15–17)). It is important to note that the updated estimates for species abundance and areal extent do not illustrate trends but rather improved information about the species over time.

As explained in more detail in the Species Report (Service 2015, p. 43), three of five populations occur primarily or entirely on lands that are being managed for conservation purposes, including the Butano Ridge population at Pescadero Creek County Park, the Bonny Doon population at Bonny Doon Ecological Reserve managed by the California Department of Fish and Wildlife (CDFW), and the Eagle Rock population at Big Basin State Park managed by the California Department of Parks and Recreation (CDPR). A fourth population (Majors Creek) is primarily on lands at Gray Whale Ranch State Park, with a small portion on privately owned land. The fifth population (Bracken Brae) is entirely on private lands owned by a conservation-oriented landowner; this land is also designated by the County of Santa Cruz as environmentally sensitive habitat, which places restrictions on most development. Because four of the five populations, either wholly or primarily, occur on park or reserve lands, most of the

individuals in the Bonny Doon, Butano Ridge, Majors Creek, and Eagle Rock populations are protected against the threats identified as imminent (logging, agricultural conversion, and development) at the time of listing and in the Recovery Plan. Because the Bracken Brae population is being managed by a conservation-oriented landowner and county restrictions are in place that would restrict most development, development-related threats to this population appear negligible. Therefore, we conclude that the downlisting criterion has been substantially met.

The Recovery Plan also states that Santa Cruz cypress can be delisted when all five populations are assured of long-term reproductive success, with insurance against failure provided by the availability of banked seed (Service 1998, p. 45). This criterion was intended to address the point at which long-term threats to the species' persistence had been addressed and its persistence ensured. As explained in more detail in the Species Report (Service 2015, pp. 18–20), Santa Cruz cypress requires fire or other disturbance for germination of seeds and recruitment of new individuals into the populations. As detailed above in the **Summary of Biological Status and Factors Affecting the Species** section and in the Species Report (Service 2015, pp. 23–25), alteration of fire regime and lack of management are likely to significantly impact the long-term persistence of the species. Additionally, only seed for the Bonny Doon, Majors Creek, and Bracken Brae populations is stored in a conservation bank; no seed has been banked for the Eagle Rock or Butano Ridge populations. Therefore, based on our analysis of the best available information, we conclude that the delisting criterion for the species has not been met.

In addition to the significant protections now afforded to Santa Cruz cypress as outlined above, various studies have occurred since development of the Recovery Plan that aid in our understanding of the status of Santa Cruz cypress. For example:

- Recent surveys indicate that four of the five stands of Santa Cruz cypress contain a larger number of individuals than was estimated at the time of listing and in the Recovery Plan (Service 2015, p. 43).
- Although data indicate the majority of trees are reproductive, many trees (as indicated by surveys conducted specifically at Butano Ridge and Majors Creek populations) are even-aged (occur in stands or populations with individuals all of approximately the same age). Even-aged stands indicate that vigorous recruitment (survival of seedlings to reproductive age and into the adult population) is not evident (McGraw 2011, p. 26). In contrast, vigorous recruitment would be indicated by stands or populations including individuals of multiple sizes or age classes representing various life stages of the species.
- While seed production appears to be strong at each of the sampled populations, recruitment, which depends more on extrinsic factors such as the availability of appropriate habitat for seedling survival, is more variable among stands even within a population.

These and other data that we have analyzed indicate that most threats identified at listing and during the development of the Recovery Plan are reduced in areas occupied by Santa Cruz cypress and that the status of Santa Cruz cypress has improved, primarily due

to the habitat protection provided by CDFW, CDPR, the County of San Mateo, and the County of Santa Cruz. However, threats associated with a lack of habitat management and alterations of the fire regime continue to impede the species' ability to recover.

Additional information on recovery and recovery plan implementation are described in the "Progress Toward Recovery" section of the Species Report (Service 2015, pp. 39–43).

Summary of Changes from the Proposed Rule

In the Species Report, we state "Historical distribution of Santa Cruz cypress beyond the five currently recognized populations is unknown (Service 2015, p. 11)." This should be corrected to say "Historical distribution of Santa Cruz cypress beyond the range of five currently recognized populations is unknown." As stated in the Species Report, there are reports of a few scattered trees along Empire Grade Road (Service 2015, p. 13) that are not believed to be interbreeding with any of the five main populations. In addition to this occurrence, there is a California Natural Diversity Database (CNDDB 2014) record of a historical occurrence that was found near Mount Hermon in the Santa Cruz Mountains (CNDDB element occurrence index 72235). This record was not included in the previous report because the exact area of collection was unspecified, and this occurrence has never been reaffirmed after the initial collection was made in 1940. The inclusion of this historical occurrence falls within the currently recognized species range, and does not change the existing information we have on this species.

We have not made any substantive changes in this final rule based on the comments that were received during the comment period, but have added or corrected text to clarify the information that was presented. One peer reviewer provided new information stating that Santa Cruz cypress populations are most likely experiencing a net reduction in fire frequency relative to what they experienced prior to Euro-American settlement, and it is unknown if regeneration of the populations can be sustained in the absence of human intervention. This information was incorporated into the Species Report for the species (Service 2015, pp. 18–20, 25).

On July 1, 2014, we published a final policy interpreting the phrase “significant portion of its range” (79 FR 37578). We have revised our discussion of “significant portion of its range” as it relates to the Santa Cruz cypress in the **Determination** section below to be consistent with our new policy. Although the final policy’s approach for determining whether a “significant portion of its range” analysis is required is different than that discussed in the proposed rule (78 FR 54221), applying the policy did not affect the outcome of the final status determination for the Santa Cruz cypress.

Summary of Comments and Recommendations

In the proposed rule published on September 3, 2013 (78 FR 54221), we requested that all interested parties submit written comments on the proposal by November 4, 2013. We also contacted appropriate Federal and State agencies, scientific

experts and organizations, and other interested parties and invited them to comment on the proposal. Newspaper notices inviting general public comment were published in the local Santa Cruz Sentinel and San Mateo County Times. We did not receive any requests for a public hearing.

During the comment period, we received four peer review comment letters and one other comment on the proposed reclassification of Santa Cruz cypress. All substantive information related to the reclassification of the species or the taxonomic change for Santa Cruz cypress provided during the comment period was fully considered in development of this final determination and is addressed in the responses to comments, below. All public and peer review comments are available at www.regulations.gov (Docket No. FWS-R8-ES-2013-0092) and from our Ventura Fish and Wildlife Office by request (see **FOR FURTHER INFORMATION CONTACT**).

Peer Reviewer Comments

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), we solicited expert opinion from six knowledgeable individuals with scientific expertise that included familiarity with Santa Cruz cypress and its habitat, the ecology of similar cypress species, and the role of fire in cypress ecology and the Santa Cruz mountains. We received responses from four of the peer reviewers.

We reviewed all comments received from the peer reviewers for substantive issues and new information regarding the reclassification of Santa Cruz cypress. Two

peer reviewers supported our finding that the Santa Cruz cypress warranted reclassification to threatened, and provided no additional comments. Two other peer reviewers replied with comments, and generally concurred with our methods, but disagreed about the appropriateness of reclassifying the species without meeting the recovery criteria identified in the Recovery Plan (Service 1998, p. 30). The two peer reviewers provided additional information, clarifications, and recommendations on how to manage for the conservation of Santa Cruz cypress and its habitat. All recommendations have been acknowledged and will be considered during the development of future management and recovery strategies.

Response to Peer Reviewer Comments

(1) *Comment:* Two peer reviewers stated that Santa Cruz cypress does not meet the criteria for reclassification from endangered to threatened found in the Recovery Plan for the Santa Cruz Cypress (Service 1998, p. 30). Specifically, one reviewer commented that protection has not been secured for all five populations and their habitat from the threat of development, as stated in the criteria for reclassification in the Recovery Plan. This reviewer identified the Bracken Brae population as unprotected because it is owned by a private landowner.

Our Response: In the **Recovery and Recovery Plan Implementation** section above and in the “Progress Toward Recovery” section of the Species Report (Service 2015, pp. 39–43), we acknowledge that all known habitat is important to the conservation

of the Santa Cruz cypress, and that the Bracken Brae population is important for the recovery of the species, and explain our rationale for why the recovery criterion has been substantially met for downlisting. While the Bracken Brae population is not in conservation ownership, county restrictions are in place that would restrict development. As discussed above and further in the next response, we conclude that development-related threats appear negligible for this population. This situation, along with protection of all or the majority of the other four populations on State lands, leads us to conclude that the criterion to reclassify the species to threatened has been substantially met.

Additionally, since the Recovery Plan criteria were developed, we now know there are more individuals within all of the Santa Cruz cypress populations than was known at the time of listing. The greater number of individuals within each population, in combination with the conservation of much of the habitat on public lands, suggests that this species is no longer facing imminent destruction from the threats identified in the Recovery Plan (i.e., logging, agricultural conversion, and development). Thus, while the Recovery Plan provides important guidance on the direction and strategy for recovery, and can indicate when a rulemaking process may be initiated, the determination to reclassify a species on the Federal List of Endangered and Threatened Plants (50 CFR 17.12) is ultimately based on an analysis of whether a species meets the definition of an endangered species or threatened species. Please see the “Progress Toward Recovery” section of the Species Report (Service 2015, pp. 39–43) and the **Recovery and Recovery Plan Implementation** section above and in the proposed rule (78 FR 54221) for more detailed discussions of the Recovery Plan criteria.

(2) *Comment:* One peer reviewer did not agree that the threat of land use conversion in the Bracken Brae population had been diminished since the time of listing to a “minor concern.” This peer reviewer specifically stated that the Bracken Brae population is not secured from the threat of development or conversion because legal constraints have not been placed on development of the land.

Our Response: The County of Santa Cruz has designated the area where the Bracken Brae population occurs as an environmentally sensitive habitat area which requires that this habitat be preserved through County ordinance as part of the County’s General Plan (Chapter 16.32.090(C)(1)(a) and (C)(2)(b)) (County of Santa Cruz 2012, entire). Designated environmentally sensitive habitat, although not completely secure from development activities, has certain specific development restrictions that are intended to protect these areas and includes restrictions specifically related to protecting Santa Cruz cypress groves. In addition to the County restrictions, the species would still remain listed as endangered by the State, and threatened by the Federal Government, both of which offer protections for the species (when there is a Federal nexus) and its habitat that are discussed in the “Legal Protection” section of the Species Report (Service 2015, p. 34).

Although the Bracken Brae population does not have the same level of habitat conservation as other Santa Cruz cypress populations, the remaining County, State, and Federal protections will guide the future use of the private land for the continued

protection of the species. Further, the land is currently owned by a conservation-oriented landowner, and development is not anticipated. Therefore, we have determined that the threat of land conversion for the Bracken Brae population should still be classified as a minor concern compared to other potential impacts. We also conclude that the intent of the recovery criterion was to preserve the habitat from any imminent threats (see Service 1998, pp. iii, 1, 29) and has been met.

(3) *Comment:* One peer reviewer stated that all of the Santa Cruz cypress populations near developed areas were essentially unprotected because development has an indirect impact on the ability of the species to persist by altering the fire regime such that regeneration is no longer possible at levels necessary to sustain populations.

Our Response: We agree that adjacent developed areas can have indirect impacts on the alteration of the fire regime. In the Species Report (Service 2015, p. 25), we discuss how either a longer or shorter fire return interval can disrupt the ecology of the cypresses and be detrimental to their long-term survival, and that fire-return intervals are most likely to be disrupted near areas of residential or commercial development. While we acknowledge that the populations near developed areas are at a higher risk of a disrupted fire-return interval, we have determined that the habitat is still protected from imminent destruction and that the level of threat is commensurate to a threatened rather than an endangered species.

(4) *Comment:* One peer reviewer commented that Santa Cruz cypress populations are most likely experiencing a net reduction in fire frequency relative to what they experienced prior to Euro-American settlement, and it is unknown if regeneration of the populations can be sustained in the absence of human intervention. The reviewer provided a personal observation of how the absence of stand-replacing fires in a similar cypress species (MacNab cypress [*Hesperocyparis macnabiana*]) can lead to the gradual decline of the population.

Our Response: See our response to comment (3) above for a discussion and our evaluation of the impacts of fire ecology on Santa Cruz cypress. We appreciated this new information based on the peer reviewer's observation of a related species. Studies of closely related species with similar life-history characteristics can offer insight into the ecology of Santa Cruz cypress. Studies of similar species (i.e., surrogate species) can bolster our knowledge of their life history. This information builds upon our previous knowledge and provides additional insight into the fire ecology necessary for Santa Cruz cypress persistence. We consider this complementary biological and ecological information and have included this information as an addendum to the Species Report.

Comments from the State and Counties

Section 4(b)(5)(A)(ii) of the Act states, "the Secretary shall ...give actual notice of the proposed regulation (including the complete text of the regulation) to the State agency in each State in which the species is believed to occur, and to each county or

equivalent jurisdiction in which the species is believed to occur, and invite the comment of such agency, and each such jurisdiction, thereon.” We submitted the proposed regulation to the State of California but received no formal comments from the State regarding the proposal. Although formal comments were not received, we note that Santa Cruz cypress is listed by the State as an endangered species; therefore, the reclassification of the species from federally endangered to federally threatened would likely have little or no effect on existing State protections. We also provided notice to the Counties of San Mateo and Santa Cruz at the time of the proposed rulemaking. We did not receive any comments from the two counties.

Public Comments

We received one public comment letter during the comment period for this rule.

(5) *Comment:* The commenter stated that Santa Cruz cypress should remain at the highest level of protection “because of climate change and habitat loss.” The commenter did not include any supporting information or analyses regarding Santa Cruz cypress or the ecology of the Santa Cruz area.

Response: We discuss both the effects of climate change and habitat loss on Santa Cruz cypress in the Species Report (Service 2015, pp. 26–29, 38). With respect to both of these impacts, the commenter did not provide any new or additional supporting information that was specific to the effects on Santa Cruz cypress which we have not

already evaluated. While we acknowledge that the effects of climate change and habitat loss are still a concern for the species, we have determined that the level of threat is commensurate to a threatened species rather than an endangered species.

(6) *Comment:* The commenter expressed concern with the peer review process, and questioned the bias of the peer review panel.

Response: In order to ensure the quality and credibility of the scientific information we use to make decisions, we have implemented a formal "peer review" process for listing and recovery documents, as required according to our guidelines for peer review, which published in the **Federal Register** on July 1, 1994 (59 FR 34270). We consult experts to ensure that our decisions are based on sound science. The selection of participants in a peer review is based on expertise, with due consideration given to independence and potential conflicts of interest. The peer reviewers for the Santa Cruz cypress were chosen based on their expertise demonstrated by published research on western hemisphere cypress taxonomy, population dynamics, serotiny (ecological relationships of cone-bearing plants to fire), California fire regimes, or the ecology of Santa Cruz area flora.

Determination

Section 4 of the Act (16 U.S.C. 1533), and its implementing regulations at 50 CFR part 424, set forth the procedures for adding species to the Federal Lists of

Endangered and Threatened Wildlife and Plants. An assessment of the need for a species' protection under the Act is based on whether a species is in danger of extinction or likely to become so because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. As required by section 4(a)(1) of the Act, we conducted a review of the status of this plant and assessed the five factors to evaluate whether Santa Cruz cypress is in danger of extinction or likely to become so in the foreseeable future throughout all of its range.

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by the Santa Cruz cypress. We reviewed information presented in the 2011 petition, information available in our files and gathered through our 90-day finding (77 FR 32922; June 24, 2012) in response to this petition, and other available published and unpublished information. We also consulted with species experts and land management staff with CDFW, CDPR, the County of San Mateo, and the County of Santa Cruz, who are actively managing for the conservation of Santa Cruz cypress.

In considering what factors might constitute threats, we must look beyond the mere exposure of the species to the factor to determine whether the exposure causes actual impacts to the species. If there is exposure to a factor, but no response, or only a

positive response, that factor is not a threat. If there is exposure and the species responds negatively, the factor may be a threat and we then attempt to determine how significant the threat is. If the threat is significant, it may drive, or contribute to, the risk of extinction of the species such that the species warrants listing as endangered or threatened as those terms are defined by the Act. This does not necessarily require empirical proof of a threat. The combination of exposure and some corroborating evidence of how the species is likely impacted could suffice. The mere identification of factors that could impact a species negatively is not sufficient to compel a finding that listing is appropriate; we require evidence that these factors are operative threats that act on the species to the point that the species meets the definition of endangered or threatened under the Act.

The Act defines an endangered species as any species that is “in danger of extinction throughout all or a significant portion of its range” and a threatened species as any species “which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” We find that the Santa Cruz cypress is not presently in danger of extinction throughout its entire range based on the severity and immediacy of threats currently impacting the species. As a result of recent information, we know that there are a significantly larger number of Santa Cruz cypress individuals than were known at the time of listing (Service 2009, p. 13; Service 2015, p. 45) and that there is significant conservation of lands that support the populations. Significant impacts at the time of listing that could have resulted in the extirpation of all or parts of populations have been eliminated or reduced since listing. We conclude that

the previously recognized impacts to Santa Cruz cypress from present or threatened destruction, modification, or curtailment of its habitat or range (specifically, residential development, agricultural conversion, logging, and oil and gas drilling) (Factor A); overutilization for commercial, recreational, scientific, or educational purposes (Factor B); disease or predation (Factor C); and other natural or human-made factors affecting its continued existence (specifically, reproductive isolation) (Factor E) do not rise to a level of significance, either individually or in combination, such that the species is currently in danger of extinction.

However, alteration of the fire regime (Factors A and E) has the potential to disrupt the long-term persistence of the species across its entire range (resulting in the species potentially facing a senescence risk in the future) if fire continues to be excluded or suppressed near these populations. At least four populations of Santa Cruz cypress contain some proportion of reproductive individuals and also exhibit some level of recruitment (the portion of Bonny Doon population that burned in the 2008 Martin Fire, and the Eagle Rock, Butano Ridge, and Majors Creek populations). However, without fire or other appropriate disturbance to simulate fire, we expect the level of reproduction and recruitment to decrease as existing trees become senescent. Given the potential lifespan of the Santa Cruz cypress of approximately 100 years, we would expect to see population declines over this timeframe as a result of mortality of currently existing trees, and lack of replacement due to low recruitment and declining reproduction, leading eventually to the species becoming in danger of extinction in the future.

Santa Cruz cypress also will continue to be impacted by competition with nonnative, invasive species (Factors A and E); genetic introgression (Factor E); vandalism and unauthorized recreational activities (Factors A and E); and the effects of climate change (Factor A and E). Additionally, the existing regulatory mechanisms are inadequate to fully protect the species from the threats listed above (Factor D). However, the severity and magnitude of threats, both individually and in combination, and the likelihood that any one event would affect all populations is significantly reduced as a result of the removal of multiple threats, the reduced impact of most remaining threats, and the extensive amount of conservation occurring throughout the range of the species (including, but not limited to, the extensive preservation of occupied lands in perpetuity and development of management plans or guidance within at least one population (Bonny Doon)).

In conclusion, after review of the best available scientific and commercial information pertaining to the species and its habitat, we have determined that the ongoing threats are not of sufficient imminence, intensity, or magnitude to indicate that Santa Cruz cypress is presently in danger of extinction throughout all its range. Although threats to Santa Cruz cypress still exist and will continue into the foreseeable future, the implementation of conservation measures or regulatory actions has greatly reduced the imminence and severity of threats to the Santa Cruz cypress and its habitat. All five populations are primarily threatened by changes in the historical fire regime. Additionally, threats from competition with nonnative species and climate change exist for all populations. Our evaluation of the best available information indicates that the

overall level of threats is not significantly different at any of these populations (Service 2015, pp. 24–41), with the primary current threat to all populations being alteration of fire regime. We, therefore, conclude that Santa Cruz cypress is not currently in danger of extinction, but is threatened with becoming an endangered species within the foreseeable future throughout all of its range.

Because we have determined that Santa Cruz cypress is likely to become endangered in the foreseeable future throughout all of its range, no portion of its range can be “significant” for purposes of the definitions of “endangered species” and “threatened species.” See the Service’s final policy interpreting the phrase “Significant Portion of Its Range” (79 FR 37578; July 1, 2014). Therefore, on the basis of the best available scientific and commercial information, we find that the Santa Cruz cypress now meets the definition of a threatened species (i.e., is likely to become an endangered species within the foreseeable future throughout all of its range) and are reclassifying the Santa Cruz cypress from an endangered species to a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

Effects of This Rule

This rule will revise 50 CFR 17.12(h) to reclassify Santa Cruz cypress from endangered to threatened on the List of Endangered and Threatened Plants. However, this reclassification does not significantly change the protections afforded this species under the Act. Pursuant to section 7 of the Act, all Federal agencies must ensure that any

actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of Santa Cruz cypress. Whenever a species is listed as threatened, the Act allows promulgation of special rules under section 4(d) that modify the standard protections for threatened species found under section 9 of the Act and Service regulations at 50 CFR 17.31 (for wildlife) and 17.71 (for plants), when it is deemed necessary and advisable to provide for the conservation of the species. No special section 4(d) rules are proposed, or anticipated to be proposed, for Santa Cruz cypress, because there is currently no conservation need to do so for this species. Recovery actions directed at Santa Cruz cypress will continue to be implemented, as funding allows, as outlined in the Recovery Plan for this species (Service 1998, entire).

Required Determinations

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that

tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes. No tribal lands are within the range of the Santa Cruz cypress.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

We determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), need not be prepared in connection with regulations adopted pursuant to Section 4(a) of the Endangered Species Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited in this final rule is available on the Internet at <http://www.regulations.gov> under Docket No. FWS–R8–ES–2013–0092 or upon request from the Field Supervisor, Ventura Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this final rule are employees of the Pacific Southwest Regional Office in Sacramento, California, in coordination with employees of the Ventura Fish and Wildlife Office in Ventura, California.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Regulation Promulgation

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as follows:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; 4201–4245; unless otherwise noted.

2. Amend § 17.12(h) as follows:

- a. By removing the entry for “*Cupressus abramsiana*” under CONIFERS, and

b. By adding an entry for “*Hesperocyparis abramsiana*” under CONIFERS to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Species		Historic range	Family	Status	When listed	Critical habitat	Special rules
Scientific name	Common name						
* * * * *							
CONIFERS							
* * * * *							
<i>Hesperocyparis abramsiana</i>	Santa Cruz cypress	U.S.A. (CA)	Cupressaceae	T	252	NA	NA
* * * * *							

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Dated: February 1, 2016

Signed: Stephen Guertin

Acting Director, U.S. Fish and Wildlife Service.

Billing Code 4333–15

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